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| 10/019,120 | 01/30/2002 | Rauno Rantanen | 3397-111PUS | 1903 |

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| EXAMINER |
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TUROC, DAVID P

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| ART UNIT | PAPER NUMBER |
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1762

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/019,120

Applicant(s)

RANTANEN, RAUNO

Examiner

David Turocy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-67 and 76-85 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 78-85 is/are allowed.
- 6) ☒ Claim(s) 20-24, 30-34, 36-40, 42-46, 48-52, 54-58, 61-65, 76 and 77 is/are rejected.
- 7) ☒ Claim(s) 25-29, 35, 41, 47, 53, 59 and 60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The applicant's amendments, filed 5/25/2005, have been fully considered and reviewed by the examiner. The examiner notes the amendment to claim 67 to remedy the minor informality and therefore the claim rejection has been withdrawn. The examiner notes the amendment to claim 23 to remedy the 35 USC 112 second paragraph rejection, therefore the rejection has been withdrawn. The examiner notes the addition of new independent claims 78 and 83 to incorporate the allowable subject matter, as well as other dependant claims 76-77, 79-82 and 84-85. Claims 20-67 and 76-85 pending.

Response to Arguments

2. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 20-22, 24, 48-50, 52, 57-58, and 76-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5789022 by Kustermann et al ("Kustermann") in view of US Patent 4072772 by Franz and further in view of US Patent 6063450 by Bernert et al. ("Bernert").

Kustermann discloses utilizing a pressurized jet to apply treating agent onto a moving surface (Figure 1, Column 3, lines 11-15). Kustermann discloses that it is known in the art to apply treating agent directly onto the fiber web as it moves along a path of travel (Column 1, lines 20-25). Kustermann also discloses a method of applying a treatment agent onto a roll to transfer the agent onto a moving web (Column 2, lines 60-65, Column 3, lines 13-15). Kustermann also discloses controlling the amount of treating agent fed onto the moving surface as a function of the volume flow of the treating agent (Column 3, lines 17-25).

However, Kustermann fails to teach sending the treatment agent into a feeding chamber, through a screen plate and then forming jets through openings defined by the peripheries of a nozzle plate.

However, Franz discloses a method for applying a coating onto a moving surface where the treatment agent is fed into a feeding chamber through a screen plate and then jets, formed through openings in the nozzle plate and the entire peripheries of the openings are defined by the nozzle plate, are directed towards the moving surface (Figure 8, 14, Abstract).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kustermann to use the pressurized spray nozzle suggested by Franz to provide a desirable application of a treatment agent because Kustermann teaches applying a treating agent through a pressurized jet onto a surface moving along a path and Franz teaches a known pressurized jet using openings in a nozzle plate to apply a treating agent onto a moving surface.

Kustermann in view of Franz teaches of applying the coating material as a free jet, but fails to disclose directing each jet such that each of the jets remains separated from each other in the space between the nozzle plate and the moving surface.

However, Bernert teaching of a coating a moving substrate using a free jet method, discloses using a free jet where the spray patterns overlap between adjacent nozzles or in the alternative the adjacent spray nozzles do not overlap, but rather the overlapping portion of the coating only overlap in two consecutive coating cycles, i.e. two consecutive nozzle plates (Column 2, lines 30-48). Bernert discloses that it is within the skill of one ordinary in the art at the time of the invention to determine the amount of overlap, depending on the desired coating properties, between two adjacent nozzles in the nozzle array. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kustermann in view of Franz to produce a free jet without overlapping of adjacent nozzles with the expectation of producing a coating with the desired properties.

Claims 76-77: Kustermann, Franz, and Bernert fails to explicitly teach of providing a nozzle plate with a thickness within the range of 0.1 to 0.5 mm, however, Franz teaches of recessing the tub (278) from the edge of the nozzle plate about 0.003 inches, or about 0.075 millimeters (Column 11, lines 22-35). As shown in figure 9, tub (278) is recessed about half the thickness of the nozzle pate, therefore Figure 9 reasonably suggests to one of ordinary skill in the art to select a nozzle plate thickness of approximately 2 times the desired thickness or about 0.15 millimeters, which is within the range as claimed.

5. Claims 23 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz and Bernert as applied to claim 20 above and taken further in view of US Patent 3301699 by H.J. Mozzi ("Mozzi").

Kustermann, Franz, and Bernert are applied here for the same reasons set forth in the 35 USC 103(a) rejection above. Kustermann discloses aiming the nozzles onto the surface of the applicator roll or under certain circumstances aiming the nozzles directly onto the surface of the web, while preferably the nozzles are aimed at the application roll near the roll nip (Column 5, lines 1-10). Such a disclosure shows that it is within the skill of one of ordinary skill in the art to determine the direction to aim the nozzles depending on the circumstances. However, Kustermann, Franz, and Bernert do not teach applying a portion of the treating agent directly onto the surface of the web

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and a portion of the treatment agent directly onto the surface, which contacts the web in the roll nip.

Mozzi, teaching of application of a treating agent onto a moving web, discloses aiming the pressurized spray nozzles so that a portion of the treating agent contacts the web and a portion of the treating agent contacts the surface of the roll (Column 2, lines 45-56, Figure 2).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kustermann, Franz, and Bernert to aim the spray nozzles as suggested by Mozzi to provide a desirable coating of a continuously moving surface because Kustermann, Franz, and Bernert teach that it is within the skill of one ordinary in the art to determine the direction to aim the nozzle and Mozzi teaches that it is known in the art to aim the nozzles so that a portion of the spray pattern contacts both the web and the transfer roll.

6. Claims 36-38, 40, 55 and 64-65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz and Bernert and taken further in view of US Patent 5405087 by Waryu et al. ("Waryu").

Kustermann in view of Franz and Bernert teaches all the limitations of these claims as discussed in the 35 USC 103(a) rejection above, except they fail to teach cleaning the nozzle plate utilizing a needle-shaped water jet.

However, Waryu, teaching of applying a coating through a pressurized jet, discloses cleaning the opening in the nozzle by directing a needle-shaped water jet at the nozzle (Figure 1, Column 4, lines 21 – 37). Waryu discloses that such a cleaning jet will wash off and prevent any accumulating of the spray material on the nozzle (Column 5, lines 57-51).

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kustermann in view of Franz and Bernert to clean the openings of the nozzle with a water jet suggested by Waryu to provide a desirable prevention of accumulation of coating material on a nozzle because Kustermann in view of Franz and Bernert teaches coating a substrate through a nozzle and Waryu teaches that when coating a substrate using a nozzle it is advantageous to provide a cleaning water jet to wash off and prevent accumulation of coating material on the nozzle.

7. Claims 30-32, 34, 54, and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz, Bernert, and Waryu taken further in view of US Patent 5219618 by Daniels ("Daniels").

Kustermann in view of Franz, Bernert, and Waryu teaches all the limitations of these claims as discussed in the 103(a) rejection above, except they fail to teach cleaning the nozzle plate by blasting steam against the nozzle plate.

However, Daniels, teaching of a coating a moving web, discloses preventing the build-up of coating material on doctor blade using steam, water, a mixture of steam and

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water, or any material that does not affect the process (Column 2, lines 50-58). While it is noted that Daniels provides a cleaning jet onto a doctor blade, Daniels is utilized here to show that it is known in the art to blast steam, water, or any material appropriate for the process, at a surface to provide desired cleaning.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kustermann in view of Franz, Bernert, and Waryu to use the steam cleaning suggested by Daniels to provide a desirable cleaning of the nozzle because Kustermann in view of Franz, Bernert, and Waryu teaches using a water jet to prevent accumulation of coating material on the nozzle and Daniels teaches steam is a known substitute to water to wash off and/or prevent any undesirable coating material on a surface.

8. Claims 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz, Bernert, Mozzi and Waryu taken further in view of US Patent 5219618 by Daniels ("Daniels").

Kustermann, Franz, Bernert, Mozzi and Waryu, and Daniels are applied here as applied here for the same reasons as give above in the 35 USC 103(a) rejection.

9. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz, Bernert, and Mozzi and taken further in view of US Patent 5405087 by Waryu et al. ("Waryu").

Kustermann, Franz, Bernert, Mozzi, and Waryu are applied here as applied here for the same reasons as give above in the 35 USC 103(a) rejection.

10. Claims 42-44, 46, and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz, Bernert and Waryu taken further in view of WO96/10463 by Kunze-Concewitz ("Kunze-Concewitz").

*** Please note: US Patent 5964952 by Kunze-Concewitz is utilized here as a fair translation of WO96/10463 by Kunze-Concewitz ***

Kustermann in view of Franz, Bernert and Waryu teaches all the limitations of these claims as discussed in the 103(a) rejection above, except they fail to teach cleaning the nozzle plate with ultrasound.

However, Kunze-Concewitz, teaching of a method of cleaning a surface with water, discloses conventional cleaning methods include ultrasound and spraying water at high pressure from a nozzle (Column 1, lines 10-17). While it is noted that Kunze-Concewitz teaches a method of cleaning a surface, Kunze-Concewitz is utilized here to show that it is known in the art to clean a surface using any number of conventional cleaning methods including ultrasound and high-pressure water.

Therefore, it would have been obvious to one skilled in the art at the time of the invention to modify Kustermann in view of Franz, Bernert and Waryu to use the

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ultrasound cleaning method as suggested by Kunze-Concewitz to provide a desirable nozzle cleaning because Kustermann in view of Franz, Bernert and Waryu teaches cleaning a nozzle with a high pressure water jet and Kunze-Concewitz teaches ultrasound cleaning is a known substitute to high pressure water jet to clean a surface. Please note that the test of obviousness is not an express suggestion of the claimed invention in any or all references, but rather what the references taken collectively would suggest to those of ordinary skill in the art presumed to be familiar with them (*In re Rosselet*, 146 USPQ 183).

11. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kustermann in view of Franz, Bernert, and Mozzi and taken further in view of WO96/10463 by Kunze-Concewitz ("Kunze-Concewitz").

Kustermann, Franz, Bernert, Mozzi, and Kunze-Concewitz are applied here as applied here for the same reasons as give above in the 35 USC 103(a) rejection.

Allowable Subject Matter

12. Claims 78-85 are allowed.

13. Claims 25-29, 35, 41, 47, 53, 59-60,63, and 66-67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As for claims 25-29, 35, 41, 47, 53, 59-60,63, and 66: None of the prior art cited or reviewed by the examiner discloses providing a nozzle plate moving transversely relative to the direction of the movement of the moving surface, so that at least a portion of the length of the nozzle plate is outside of the width of the area being treated. The closest prior art, Franz and Bernert, discloses a nozzle plate already extending over the edges of the surface to be treated and does not require movement to get there.

As for claim 67: none of the prior art cited or reviewed by the examiner discloses providing a steel plate movably fitted in the feeding chamber so that the steel blade scrapes the screen plate and nozzle plate during movement.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David Turocy
AU 1762



TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER